AM-1 Spacecraft Operations Confidence Test - EGS1

Test Objectives:

The objectives of this test are to demonstrate the ability to operate the AM-1 spacecraft through the Space Network. This test will exercise the following flight operations capabilities under a nominal daily operations scenario.

- Planning and Scheduling to include Resource Models and Schedule Management.

- Command Management to include Load Management and Ground Script Generation.

- Commanding to include real time commanding and command load uplinks.

- Telemetry Processing from receipt to user display and history logging.

- Resource Management including the initial configuration of the logical strings for operations and failover to stand-by equipment. Failovers exercised will include:

    Failover to stand-by Real Time Server
    Failover to stand-by Data Server
    RAID element failure
    Timing Server Failure
    EBnet Router Failure
    FDDI Concentrator Failure
    FDDI - Ethernet Hub Failure
    FDDI router Failure

Requirements to be Verified:

TBS

Test Configuration:

TBS

Participants and Support Requirements:

Participants

    FOT, I&T, EDOS, SN/NCC, RFSOC, Nascom, EBnet, FOS Developer Support

e. Communications:

>   EBnet circuits:
>
>   EDOS GSIF - EOC
>
>   (**TBD**)

f. Test Tools:

TBD

g. Equipment and Software
    FDF Workstation
    EOC Full Real Time Contact string
    Telemetry Sub-system
    Real time contact Subsystem
    Resource Management Sub-system
    Command Sub-system
    Command Management Sub-system
    Planning and Scheduling Sub-system
    User Interface Sub-system

Test Data:

Description / Characteristics	Source	File/script name & Location
TBD - Housekeeping Telemetry - Will re-use test data from EOC1		
Mission Timeline	Produced by the execution of EOC3 - Planning and Scheduling Confidence test	
Ground Script	Produced by the execution of EOC3 - Planning and Scheduling Confidence test	
Command Loads	Produced by the execution of EOC3 - Planning and Scheduling Confidence test	

Test Case Descriptions:

This will be an operational test of 8 - 24 hours duration (to be negotiated). It contains one test case, a daily operations scenario, or "Day in the life of the AM-1 Spacecraft".

Pre-requisites: Telemetry Processing Confidence Test   (EOC1)
                 Command Processing Confidence Test   (EOC2)
                 Planning and Scheduling Confidence Test   (EOC3)
                 Telemetry Logging and Analysis Confidence Test   (EOC4)
                 Resource Management Confidence Test   (EOC5)

EGS1.1   AM-1 Daily Operations Test

21 days prior to the test, EOC3 will be executed to produce a mission timeline, ground script, command load and communications scheduling requests to support the 24 hour activity period described in the EOC3 test package. TDRSS scheduling requests will be submitted to the NCC and iterated until a forecast schedule is finalized 7 days prior to the test. At test execution time, the FOT in the EOC will execute the ground script, conducting telemetry and commanding contacts to the SSIM via the RFSOC and SN. Housekeeping telemetry data streams will be captured and logged for later analysis. The ability to detect, and recover from equipment failures in the operating logical strings will be demonstrated as follows:

(TBD)

Test Procedures:

(**TBS** - for this test, the procedures may take the form of the mission timeline and instructions for inducing the equipment failures to start fail-over operations.)